

XIII.—*On Spiny Rats of the Proechimys Group from South-eastern Brazil.* By OLDFIELD THOMAS.

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THE spiny rats referable to *Proechimys* that occur in South-eastern Brazil, Bahia, Rio Janeiro, &c., have for long been in an excessive state of confusion, mainly owing to the fact that the species to which the earlier names—*setosus*, *myosurus*, *albispinus*, and others—were applicable had never been properly identified.

Now, however, I have been through the material in the British Museum, and, in addition, have had the advantage, by the kindness of Dr. R. Anthony, of examining the typical skulls of *Echimys setosus*, Desm., and *E. albispinus*, I. Geoff., while Dr. Winge has given me information about *Loncheres elegans*, Lund. Furthermore, Dr. Bedot and M. Revilliod, of Geneva, have been so good as to lend me two additional examples representing the original *E. albispinus* of Bahia.

The species that occur in the area referred to prove to be no less than five in number, and they belong to two very distinct groups, which may be considered as of subgeneric importance—namely, *Proechimys*, s. s., and *Trinomys*, subg. n.

The primary distinction between these lies in the number of laminae present in the cheek-teeth—four in *Proechimys*, three in *Trinomys*,—while, in addition, the skull of *Trinomys* is less elongate, with shorter muzzle, less-developed supra-orbital and parietal ridges, and orthodont or slightly proodont incisors, as compared with the opisthodont incisors of *Proechimys*. In all characters, however, the species grade too much into one another to consider the groups as genera, especially as the most important point, the number of the tooth laminae, has a curious exception—*Proechimys vacillator*, which, as explained in the original description, has a variable number of its cheek-teeth trilaminate, while it is in all other respects typically *Proechimys*, with long skull, strong ridges, and opisthodont incisors; and in any case p^4 is always quadrilaminate. *P. albispinus*, as being the most extreme, may be considered the genotype of *Trinomys*.

The five species of the area, with the addition of a new subspecies to *P. albispinus*, may be sorted as follows:—

A. With 4 laminae to cheek-teeth.—*Proechimys*, s. s.

- a. Skull with strong ridges and post-orbital angles. Palatal notch to middle of m^3 . (Minas Geraes.) .. 1. *roberti*, Thos.

- b. Brain-case little ridged, and without strong postorbital angles. Palatal notch to middle of m^2 .
- a^2 . Larger; skull about 54 mm. Supraorbital edges scarcely beaded. Pterygoids spatulate. (São Sebastião Island, São Paulo.)
- b^2 . Smaller; skull about 51 mm. Supraorbital edges beaded. Pterygoids linear. (S.W. Rio Janeiro.)
- B. With 3 laminae to cheek-teeth.— Subgenus *Trinomys*.
- c. Palatal notch to middle of m^2 . Tail with white terminal pencil. (Bahia and Minas Geraes.)
- d. Palatal notch to front of m^2 . Tail dark above to end. (Bahia Province.)
- c^2 . Sides reddish. Skull more slender. Incisors orthodont, 86° . (Madre de Dios Island, Bahia Bay.)
- d^2 . Sides brown. Skull broader and shorter. Incisors more proodont $93-96^\circ$. (Lamarão, Bahia.)
2. *iheringi*, Thos.
3. *dimidiatus*, Günth.
4. *setosus*, Desm.
5. *albispinus*, I. Geoff.
- 5 a. *albispinus albispinus*.
- 5 b. *a. sertonius*, subsp. n.

Details about *P. roberti* and *iheringi* will be found in the original descriptions of those species.

P. dimidiatus was described by Günther* as an immature specimen without locality, presented by Lord Derby (B.M. no. 51. 7. 21. 24). We know that its donor did obtain a number of specimens from Rio Janeiro, and the skull agrees so closely with those of two examples from Itatiaya, near to the Rio-Minas frontier, collected and presented by Prof. J. P. Hill, that I have no hesitation in referring the latter to Günther's species.

"*Echimys setosus*, Desm.," was the first described of the group, but was ignored by the other early writers, who contributed synonyms to it as follows:—*myosuros*, Licht., 1820; *leptosoma*, Bts., 1827; *cinnamomeus*, Licht., 1830; *elegans*, Lund, 1841; and *fuliginosus*, Wagn., 1842. The characteristic white end to the tail is mentioned in connection with most of these, and there does not seem to be any doubt as to their reference. The typical skull, now in the Paris Museum (No. A. 7787), though very imperfect, shows clearly the trilaminar teeth characteristic of *Trinomys*, and has its palatal notch only penetrating to the middle of m^2 . Specimens corresponding to this animal have been obtained at Lagoa Santa, Minas, by Lund and others, and at "Bahia," whence

* P. Z. S. 1876, p. 747.

myosuros was described. The names *leptosoma* and *cinnamomeus* were mere renamings of *myosuros*. If, however, Lagoa Santa specimens should ultimately prove different from those of Bahia—and perhaps they are browner and less rufous, though the indifferent material does not suffice to prove it,—they should bear the name of *elegans*, Lund, with synonym *fuliginosus*, leaving *setosus* for the Bahian animal.

The type of *E. albispinus*, I. Geoff., came from Deos Island (=Madre de Dios), Bay of Bahia. Its skull is in the Paris Museum (No. A. 7669) and is practically perfect. The two specimens (327/2, 327/3) from Geneva, which were among those referred to by Pictet* as being true *albispinus*, also show clearly the characters of the species.

Finally, the Museum contains a fine series of an allied form obtained by M. Robert at Lamarão, also in Bahia, but in the highlands of the “sertão” further to the north. It is on this series that I have been able to observe the various characters of the subgenus *Trinomys*. The form may be briefly described as follows:—

Proechimys albispinus sertoniui, subsp. n.

Size about as in *albispinus*. General colour above lined brown; the fore back with buffy hairs which show through on the surface; the hinder back blackish brown, this colour arising from the dark ends of the spines. Sides not more buffy or rufous than back—in fact, less so; while the type of *albispinus* was stated to have strongly buffy sides, such as are found in old specimens of *setosus*, as has also the normal coloured Pictet specimen received from Geneva, the other being an albino. Sides of body, rump, and thighs with numerous prominent white-ended spines. Under surface, hands, and feet white. Tail dark brown, nearly black, for its whole length above; whitish below; not pencilled.

Skull short and squat, with broad muzzle; the breadth between the two lacrymal bones decidedly greater than in true *albispinus*. Supraorbital ridges well marked, but not extending on to parietals. Palatal foramina short, fusiform. Palatal notch very narrow, acute-angled, reaching forwards to the level of the front edge of m^2 . Hamular processes of pterygoids narrow, but not absolutely linear. Bullæ rather small.

Incisors more prominent than in other members of the group, the index of the type 93° , and in some specimens attaining 96° ; that of the type of *albispinus* 86° and of the two Geneva specimens 86° – 87° .

* Anim. Nouv. Genev. p. 2 (1841).

Dimensions of the type (measured in the flesh) :—

Head and body 190 mm. ; tail 170 ; hind foot 36 ; ear 23.
 Skull : greatest length 46·4 ; condylo-incisive length 41·4 ;
 zygomatic breadth 25 ; nasals 16·5 ; interorbital breadth
 10·5 ; palatilar length 17 ; palatal foramina 3·8 × 2 ; upper
 tooth-series (crowns) 7·6.

Hab. Lamarã, Bahia, about 70 miles north of Bahia City.
 Alt. 300 m.

Type. Adult male. B.M. no. 3. 9. 5. 86. Original
 number 1508. Collected 16th June, 1903, by Alphonse
 Robert. Presented by Oldfield Thomas. Fourteen speci-
 mens.

“Inhabits the catinga forest.”—*A. R.*

This subspecies differs from true *albispinus* by its less
 rufous sides, its shorter broader-faced skull, and its more
 proodont incisors. The hind foot of *albispinus* was described
 by Geoffroy as being 45 mm. in length, but Dr. Anthony
 informs me that this was an error, and that the hind foot of
 the type only measures 38 mm. (c. u.), 35 mm. (s. u.), while
 the two Geneva specimens also only have the hind foot
 36–37 mm. (s. u.). In this respect, therefore, there is no
 difference between *albispinus* and *sertonius*.

PROCEEDINGS OF LEARNED SOCIETIES.

GEOLOGICAL SOCIETY.

March 9th, 1921.—Mr. R. D. Oldham, F.R.S.,
 President, in the Chair.

The following communication was read :—

‘The Bala Country: its Structure and Rock-Succession. By
 Miss Gertrude Lilian Elles, M.B.E., D.Sc., F.G.S.

The lithological and faunal sequence is as follows :—

		Shelly faunas.	Graptolitic faunas.
VALENTIAN.	{	Cwm yr Æthen Shales.	{ Zone of <i>Monograptus crispus</i> . Zone of <i>Monograptus sedgwicki</i> .
ASHGILLIAN.	{	Hirnant Grits and Mud- stones, 300 feet, with local Hirnant Limestone.	<i>Orthis-hirnantensis</i> , fauna.
		Moel-y-Ddinas Mudstones, about 250 feet.	<i>Phacops-mucronatus</i> fauna.
		Moel-Fryn Sandstones, at least 1000 feet.	
		Rhiwlas Limestones and Mudstones.	<i>Phillipsinella-para- bola</i> fauna.